Listing of Claims

This listing of claims will replace all prior versions, and listings, of the claims in this application.

Claim 1 (currently amended):   A method of minimizing detectability of an electronically communicated message, comprising:

establishing a nominal transmission frequency;

establishing a dwell period;

defining a predetermined frequency modulation pattern about the nominal transmission frequency, the predetermined frequency modulation pattern being suitable to vary the nominal transmission frequency during the dwell period;

dividing the dwell period into a plurality of sub-dwell periods, where each sub-dwell period has a nominal sub-frequency assigned thereto according to the predetermined frequency modulation pattern;

randomly ordering the plurality of sub-dwell periods and the respective assigned nominal sub-frequencies; and

transmitting the message according to the random ordering of the nominal sub-frequencies;

for each randomly ordered nominal sub-frequency, varying the nominal sub-frequency during the respective sub-dwell period by one of increasing and decreasing the nominal sub-frequency; and

transmitting the message at frequencies by which each randomly ordered nominal sub-frequency has been increased or decreased.

Claim 2 (canceled)

Claim 3 (currently amended):   The method of claim [[2]] 1, further including:

increasing a time that the transmitted frequency transitions, while still transmitting, from one randomly ordered nominal sub-frequency to a next randomly ordered nominal sub-frequency.

Claim 4 (previously presented):   The method of claim 1, further including applying a band-limiting filter to each randomly ordered nominal sub-frequency.

Claim 5 (original):   The method of claim 1, wherein the nominal transmission frequency is one of a plurality of frequency hops of a frequency hopping strategy, and wherein the dwell period is an amount of time the frequency hopping algorithm is configured to maintain the one of the plurality of frequency hops.

Claim 6 (original):   The method of claim 1, wherein the random ordering of the nominal sub-frequencies is performed using a pseudo-random number generator.

Claim 7 (original):   The method of claim 1, wherein the predetermined frequency modulation pattern is a frequency jitter pattern that includes at least one of a frequency increase and a frequency decrease during the dwell period.

Claim 8 (original):   The method of claim 1, wherein the predetermined frequency modulation pattern is a frequency chirp characterized by one of an increase and a decrease in frequency during the dwell period.

Claim 9 (previously presented):   A method of minimizing detectability of a message transmitted by a frequency hopping algorithm, the method comprising:
establishing a nominal frequency suitable for transmitting the message during a dwell period according to the frequency hopping algorithm;
defining a predetermined frequency modulation pattern about the nominal frequency, the predetermined frequency modulation pattern being suitable to vary the nominal frequency during the dwell period;
dividing the dwell period into a plurality of sub-dwell periods, where each sub-dwell period has a nominal sub-frequency assigned thereto according to the predetermined frequency modulation pattern;
randomly ordering a sequence of the plurality of sub-dwell periods and the respective assigned nominal sub-frequencies during the dwell period;

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for each randomly ordered nominal sub-frequency, varying the nominal sub-frequency during the respective sub-dwell period by one of increasing and decreasing the nominal sub-frequency; and

transmitting the message at frequencies by which each randomly ordered nominal sub-frequency has been increased or decreased.

Claim 10 (previously presented): The method of claim 9, further including:

increasing a time that the transmitted frequency transitions from one randomly ordered nominal sub-frequency to a next randomly ordered nominal sub-frequency.

Claim 11 (previously presented): The method of claim 9, further including: applying a band-limiting filter to each randomly ordered nominal sub-frequency.

Claim 12 (previously presented): The method of claim 9, wherein the random ordering of the nominal sub-frequencies and the respective nominal sub-frequencies is performed using a pseudo-random number generator.

Claim 13 (original): The method of claim 9, wherein the predetermined frequency modulation pattern is a frequency jitter pattern characterized by at least one of a frequency increase and a frequency decrease during the dwell period.

Claim 14 (original): The method of claim 9, wherein the predetermined frequency modulation pattern is a frequency chirp characterized by one of an increase in frequency and a decrease in frequency during the dwell period.

Claim 15 (currently amended): A method of electronically transmitting a message, comprising:

establishing a nominal transmission frequency;

establishing a dwell period;

defining a predetermined frequency modulation pattern about the nominal transmission frequency, the predetermined frequency modulation pattern being suitable to vary the nominal transmission frequency during the dwell period;

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dividing the dwell period into a plurality of sub-dwell periods, where each sub-dwell period has a nominal sub-frequency assigned thereto according to the predetermined frequency modulation pattern;

randomly ordering a sequence of the plurality of sub-dwell periods and the respective assigned nominal sub-frequencies according to a pseudo-random algorithm; and

transmitting the message according to the randomly ordered ordering of the nominal sub-frequencies;

for each randomly ordered nominal sub-frequency, varying the nominal sub-frequency during the respective sub-dwell period by one of increasing and decreasing the nominal sub-frequency; and

transmitting the message at frequencies by which each randomly ordered nominal sub-frequency has been increased or decreased.

Claim 16 (canceled)

Claim 17 (currently amended):   The method of claim [[16]] 15, further including:

increasing a time that the transmitted frequency jumps from one randomly ordered nominal sub-frequency to a next randomly ordered nominal sub-frequency, wherein the increasing is accomplished by applying a band-limiting filter to the transmitted frequency.

Claim 18 (original): The method of claim 15, wherein the nominal transmission frequency is one of a plurality of frequency hops of a frequency hopping strategy, and wherein the dwell period is an amount of time the frequency hopping algorithm is configured to maintain the one of the plurality of frequency hops.

Claim 19 (original): The method of claim 15, wherein the predetermined frequency modulation pattern is a frequency chirp characterized by one of an increase in frequency and a decrease in frequency during the dwell period.

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